

L. asperellus (3020) is most nearly allied to this species, which, however, differs therefrom in its narrower outline and by the absence of metallic red reflections. The sculpture of the thorax is not so coarse, but that of the elytra is just the reverse, nearly approaching that of *L. foreigermis*.

Length, $6\frac{1}{2}$ mm. : breadth, $2\frac{1}{2}$ mm.

Macetown, Lake Wakatipu. A pair sent by Mr. A. O'Connor from Mr. H. Hamilton's recent collections.

Group EROTYLIDAE.

3360. *Cryptodacne oclularia* sp. nov. *Cryptodacne* Sharp, Man. N.Z. Coleopt., p. 640.

Subelongate, slightly convex, shining; castaneo-rufous, legs and antennae paler, sparingly clothed with slender yellow hairs.

Head smooth on the middle, finely punctate elsewhere. Thorax rather broader than long, its sides finely margined, not quite straight, being slightly rounded at the middle, with rectangular posterior angles: the apex broadly medially rounded and deeply emarginate towards the obtuse angles: its surface finely and distantly punctured, but quite smooth along the middle, and nearly so on an elongate space between that part and each side. Scutellum flat and smooth. Elytra quite as wide as thorax at the base, gradually narrowed backwards, with many somewhat irregular series of very fine punctures.

Underside rufous, with pubescence like that of the upper surface, the prosternum coarsely punctured, the metasternum and abdomen finely.

On comparing this with one of *C. ferrugata* (3156) collected by Mr. Helms at Greymouth, and kindly purchased for me at London by Mr. George Lewis, F.L.S., I find that this species differs in being more distinctly clothed and more finely sculptured. The thorax is not of the same shape, and the eyes are decidedly more convex.

Length, $4\frac{1}{2}$ mm. : breadth, $1\frac{3}{4}$ mm.

Wairiri. Another of Mr. W. L. Wallace's discoveries on the eastern Kaikouras.

ART. XVII.—*Some Notes on Rotifera not previously recorded as occurring in New Zealand.*

By C. BARHAM MORRIS, F.R.M.S.

[Read before the Otago Institute, 1st October, 1912.]

THIS paper deals with twenty-two species of *Rotifera* which have not so far been reported as having been found in the Dominion. It is the result of four years' pretty constant searching of between two and three hundred ponds and creeks, chiefly in North Otago, by myself and half a dozen other willing helpers. During the course of this period I have mounted some two thousand slides of pond-life, adopting Mr. Rousselet's formalin method in the majority of cases, and always with the best results so far as the preservation of the specimens was concerned: and my slides of *Rotifera* mounted four years ago are as good to-day as they were when first rung. I have, of course, come across many other species, such as *Floscularia ornata*, *Melicerta ringens*, *Rotifer vulgaris*, *Hydatina senta*, &c., round about Oamaru, but as these have already been recorded in the Trans. N.Z. Inst. I have not referred to them.

North Otago appears to be particularly favourable to Rotifers, and it is interesting to note that most of the species are more numerous in the late winter months than at any other time of the year; indeed, they almost entirely disappear in autumn and early winter. This is, I believe, just the reverse of what takes place in Europe, and is probably due to the fact that most of our ponds and streams dry up towards the end of summer. Low temperatures seem to have very little effect on them, and it will be remembered that Mr. James Murray, of the "Nimrod" Expedition, found living Rotifers frozen under 20 ft. of ice in a small lake at Cape Royds, South Victoria Land. It is somewhat remarkable that there should be such a dearth of new species in the locality under consideration. One might imagine that in New Zealand especially there would be some departure from the stereotyped forms of the Northern Hemisphere, but this has not proved the case in our district at any rate, and it may be attributed to the well-known fact that Rotifers and their eggs may be conveyed long distances by wind and the feathers of migratory birds.

For assistance in procuring specimens I wish to thank Miss Gore and Miss Lory, of Oamaru; Mr. G. Howes, of Dunedin; and my assistant, Arthur Willetts.

FAM. MELICERTIDAE.

Limnias ceratophylli Schrank.

In a small pond only a few yards in extent, full of quantities of decaying vegetable matter and muddy water. The tube-builders were in great numbers; clusters consisting of three and four generations were common. There were none in this pond the year previous. The largest measured $\frac{1}{20}$ in.

Ardgowan, North Otago. 25th April. A few in the Oamaru Creek in the beginning of November.

Oecistes socialis Weber.

These were found in great numbers in the Ardgowan pond referred to above, the clusters, which were greenish-grey in colour, frequently measuring $\frac{1}{3}$ in. in length, and adhering to dead twigs at the bottom. As this was the only occasion on which they were captured, they may be considered as rare. The individuals measured $\frac{1}{30}$ in. in length.

This species has been found in Victoria, Australia, by Mr. John Shephard.

Conochilus volvox Ehrenberg.

I first made the acquaintance of this beautiful Rotiferon in the beginning of July, 1909, when my assistant, Arthur Willetts, brought me a number which he found in a small pond in the centre of a ploughed paddock at Waikakahi, about twelve miles from the mouth of the Waitaki River. He had mistaken them for *Volvox globator*—a very natural error, seeing he had no microscope. The next specimen was procured in September of the following year in a gravel-pit at Tinwald, South Canterbury. They have been found in several localities in the neighbourhood of Oamaru this year during the months of October and November by members of the Microscopical Club, although I made diligent search for some years previously without success. The colonies measure from $\frac{1}{20}$ in. to nearly $\frac{1}{12}$ in. I have noticed that some individuals appear to be shorter and more stoutly built than others, the foot in particular being much shorter.

Fam. ASPLANCHNIDAE.

Asplanchna brightwelli Gosse.

This footless Rotiferon may be considered fairly common in North Otago and South Canterbury, although a year may be passed with frequent searching without coming across a single specimen. They are most likely to be met with between May and July in small ponds, and they seem to prefer the company of other species of Rotifers. The New Zealand representatives are smaller than the European, the females varying in size from $\frac{1}{40}$ in. to $\frac{1}{50}$ in.

Asplanchnopus myrmeleo Ehrenberg.

One of the finest species in the class, and plentiful from the Shag River to the Waitaki. Usually associated with *Hydatina senta* and various *Brachioni*. My specimens, which are all females, measure from $\frac{1}{25}$ in. to $\frac{1}{30}$ in.

Fam. SYNCHAETADAE.

Synchaeta pectinata Ehrenberg.

A single specimen brought to me by Mr. Gordon Garrow, of Ardgowan, who found it in a pool at Balruddery, near the Kakanui River. It answers the description of the European species, but is smaller, measuring only a little over $\frac{1}{60}$ in.

Fam. TRIARTHRIDAE.

Polyarthra platyptera Ehrenberg.

By no means common, and appears to affect shallow grassy puddles. Found in winter around Oamaru. Length, $\frac{1}{200}$ in.

Triarthra longiseta Ehrenberg.

This skipping Rotiferon is to be met with frequently in North Otago, and I am surprised that it has not been recorded before. It differs from Hudson and Gosse's plate inasmuch as the ciliary wreath is thicker and more noticeable. The body, without spines, measures $\frac{1}{60}$ in.

Triarthra mystacina Ehrenberg.

This species has been identified by Mr. Rousselet from specimens obtained by me from a pond on the North Road, Oamaru.

Fam. HYDATINIDAE.

Rhinops vitrea Hudson.

Discovered in great numbers in a horse-trough at Weston, in the beginning of November, by Miss Gore, of Oamaru. Measures from $\frac{1}{60}$ in. to $\frac{1}{50}$ in.

Notops brachionus Ehrenberg.

Obtained in many localities, from the Woodhaugh Gardens, in Dunedin, to a pond in Temuka. Plentiful from March to May. Length, $\frac{1}{50}$ in.

Fam. NOTOMMATIDAE.

Furcularia caeca Gosse.

There is some doubt in my mind as to the correctness of this being *caeca*. The body is cylindrical and the toes very much recurved, but the face is oblique, as in *gracilis*. Length, $\frac{1}{200}$ in.

The single specimen, which is not well preserved, was sent to me in a sample of water from Maheno by Mr. George Howes, F.E.S., F.L.S.

Fam. RATTULIDAE.

Rattulus longiseta Schrank.

Common, to my knowledge, from Warrington to the Waitaki River. Length, including foot, $\frac{1}{55}$ in.

Rattulus rattus Ehrenberg.

In water collected at Pukerau, near Waipahi, by Mr. Howes. One specimen had the front portion of the lorica beset with five minute spines of equal length, and closely resembled *R. cornuta*, which is described in "Rotifera Supplement." Length, including foot, $\frac{1}{75}$ in.

Fam. DINOCHARIDAE.

Dinocharis tetractis Ehrenberg.

I obtained a single representative of this species in a large swamp at the end of the Peebles Road, near the Waitaki River, on the 20th January, 1911. It differs slightly from Hudson and Gosse's drawing, as, in addition to the two large spurs, the first joint of the foot is covered with knobby projections. It is certainly not *D. inornata* Hilgendorf, as the faceted lorica can be easily made out with careful lighting and a $\frac{1}{4}$ in. objective. Length, including foot, $\frac{1}{83}$ in.

Brachionus pala Ehrenberg.

The largest and most interesting *Brachionus* I have seen. First brought to my notice by Miss Lory. The long-lumbar-spine variety, *B. amphiceros* of Ehrenberg, has of late become quite common here between May and September. My New Zealand specimens measure from $\frac{1}{50}$ in. to $\frac{1}{33}$ in. from toes to wreath. The *amphiceros* var., $\frac{1}{38}$ in., including spines.

Brachionus bakeri Ehrenberg.

Not common, by any means. Obtained once at Richmond's Crossing, and on another occasion at Weston, in October and February. Length of lorica, including spines, $\frac{1}{110}$ in.

Brachionus angularis Gosse.

Not common usually, but found recently in great numbers in a pond near Enfield, where it was associated with *B. pala*. Hudson and Gosse have remarked on the evident fancy those two species have for one another. Length from wreath to toes, $\frac{1}{77}$ in.; lorica, $\frac{1}{150}$ in.

Brachionus variabilis Hempel var. *novae-zealandiae* var. nov.

I am loath to suggest making another species of this *Brachionus*, as the list is already a long one, and there is good reason to believe that many of the so-called species are really only varieties. Slight differences in the form of the lorica are not sufficient grounds for specific isolation, particularly in a genus like *Brachionus*, where vagaries in length of spines are well known in the same species. *B. pala* and *B. bakeri* readily furnish examples of this; but in the Rotiferon now under consideration not only is the posterior end of the lorica entirely different in shape, but an elaborate renal system appears to have been developed. These organs are spread out right and left of the cloaca, and afford opportunities for study such as I do not remember to have met with before. The prolongation of the lorica seems to be the result of this enlarged renal system and the necessity for more space within the case. It is quite possible that this particular form has been already described. I have none of the more recent literature on the genus, and I am sending specimens Home for further examination.*



B. variabilis var. *novae-zealandiae*.

Ventral view of lorica.

The capture was made in a small pond at Totara, where they were in numbers, parasitic on *Daphnia thomsoni*, last October. Length from toes to wreath, $\frac{1}{50}$ in.

Brachionus quadratus Rousselet.

The lorica closely approaches the one representing *B. quadratus* in the "Rotifera Supplement," though not so angular in outline. The median anterior spines are not so long, and there is a curve instead of a mid-dorsal spine at the foot of the opening; also, I have not been able to detect the "semi-jointed" foot. On the other hand, the honeycomb-like marking is very clear and distinct with dark-ground illumination and a $\frac{1}{4}$ in. objective; and this peculiar marking Rousselet has stated is characteristic of *B. quadratus*.

Secured from a small stream at Palmerston South. I have come across it once in Oamaru, so that it is, comparatively speaking, rare so far. Length of lorica, nearly $\frac{1}{100}$ in.

Fam. ANURAEIDAE.

Anuraea aculeata Ehrenberg.

Common in ponds about Oamaru, although, from its small size ($\frac{1}{100}$ in.), it is liable to be overlooked.

Anuraea cochlearis Gosse.

Occasionally found between Oamaru and Evansdale. Length, $\frac{1}{50}$ in.

* Since writing the above I have heard from Mr. Rousselet, who states that this Rotiferon closely resembles *Brachionus variabilis*, described by A. Hempel in 1896, and found by him in the Illinois River, Quiver Lake, and Thompson's Lake, in America. The New Zealand variety has not got the square plate over the foot-opening which is conspicuous in the American species. *B. variabilis* has not been found in any other part of the world except in the two countries mentioned, which is remarkable. On Mr. Rousselet's advice, I have classed it as *B. variabilis* var. *novae-zealandiae*.